

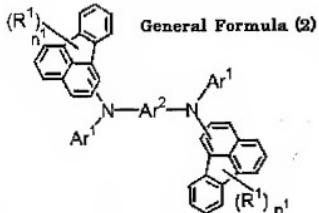
## REMARKS

This Amendment is submitted in response to the non-final Office Action mailed on August 25, 2008. No fee is due in connection with this Amendment. The Director is authorized to charge any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 112857-559 on the account statement.

Claims 17-31 are pending in this application. In the Office Action, Claim 18 is objected to because of an informality. Claims 18-22 are rejected under 35 U.S.C. §112. Claims 17-20 are rejected under 35 U.S.C. §102. Claims 17-31 are further rejected under 35 U.S.C. §103. In response, Claims 18-19, 23, 25, 27 and 29 have been amended and Claim 17 has been canceled without prejudice or disclaimer. These amendments do not add new matter. At least in view of the amendments and/or for the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

Applicants note that Claim 19 has been amended solely for clarification purposes.

Currently amended independent Claim 18 recites, in part, an organic light-emitting material comprising a material represented by a following general formula (2):

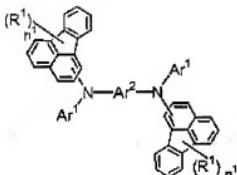


wherein:  $n^1$  is an integer of 0 to 3;  $R^1$  is an alkyl group having 10 carbon atoms or less;  $Ar^1$  is a monovalent group which is derived from monocyclic or fused-ring aromatic hydrocarbon having 20 carbon atoms or less, and which optionally has a substituent having 10 carbon atoms or less; and  $Ar^2$  is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings, and

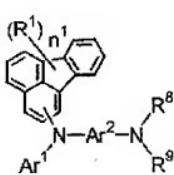
which optionally has a substituent having 4 carbon atoms or less, wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2).

Similarly, currently amended independent Claims 23, 25, 27 and 29 recite, in part, a method for producing an organic material represented by the general formula (3) below, characterized by reacting a compound represented by the general formula (6)-1 below with a compound represented by the general formula (6)-2 below using a metal catalyst:

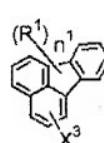
General Formula (3)



General Formula (6)-1



General Formula (6)-2



wherein in the general formula (3) above, a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (3). These amendments do not add new matter. These amendments are supported in the Specification at, for example, page 1, paragraphs 8-9; page 2, paragraphs 12-18; page 3, paragraphs 19-23; page 4, paragraphs 28-29.

In the Office Action, Claim 18 is objected to for reciting two separate sentences rather than one sentence. See, Office Action, page 2, lines 6-8. In response, Applicants have amended Claim 18 such that it comprises only one sentence.

Accordingly, Applicants respectfully request that the objection to Claim 18 be withdrawn.

In the Office Action, Claims 18-22 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The Patent Office asserts that it is unclear how the portion of Claim 18 reciting general formula (2) is associated with the beginning of the claim associated

with general formula (1). See, Office Action, page 2, lines 15-17. In response, Applicants have amended Claim 18 to remove the beginning portion of the claim associated with general formula (1). This amendment does not add new matter. The amendment is supported in the Specification at, for example, page 1, paragraphs 8-9; page 2, paragraphs 12-18; page 3, paragraphs 19-23; page 4, paragraphs 28-29. Applicants respectfully submit that currently amended Claim 18 comprises only one sentence that is clearly associated with general formula (2) and not general formula (1). Thus, Applicants respectfully submit that Claim 18 is not indefinite.

The Patent Office further asserts that Claim 18 is indefinite because the phrase "wherein said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded" is confusing. See, Office Action, page 2, lines 18-22. For example, the Patent Office alleges that it is unclear whether Ar<sup>2</sup> in general formula (2) is generally excluded from being biphenyl contrary to dependent Claim 20. See, Office Action, page 2, line 22; page 3, lines 1-2. In response, Applicants have amended Claim 18 to clarify that a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2). This amendment does not add new matter. The amendment is supported in the Specification at, for example, page 1, paragraphs 8-9; page 2, paragraphs 12-18; page 3, paragraphs 19-23; page 4, paragraphs 28-29. Claim 18 now clearly indicates that general formula (2) excludes only a compound in which: (1) Ar<sup>1</sup> is an unsubstituted phenyl group; (2) Ar<sup>2</sup> is an unsubstituted biphenyl group; and (3) each of two fluoranthenes is bonded to nitrogen at the carbon 3 position. As such, Applicants respectfully submit that it is clear that Ar<sup>2</sup> is not generally excluded from being biphenyl under general formula (2) but rather only unsubstituted biphenyl is excluded from being Ar<sup>2</sup> and only if Ar<sup>1</sup> is an unsubstituted phenyl group and each of two fluoranthenes is bonded to a nitrogen at the carbon 3 position. Therefore, Applicants respectfully submit that currently amended Claim 18 is not indefinite.

Accordingly, Applicants respectfully request that the rejection of Claims 18-22 under 35 U.S.C. §112, second paragraph, be withdrawn.

In the Office Action, Claim 17 is rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Publication No. 2000-056489 A to Kikuchi et al. ("Kikuchi"). In response, Claim 17 has been canceled. Applicants respectfully submit that the cancellation of Claim 17 renders the rejection of Claim 17 moot.

However, Applicants also respectfully note that *Kikuchi* fails to disclose or suggest each and every element of currently amended Claim 18. For example, *Kikuchi* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings as required, in part, by independent Claim 18. The Patent Office asserts that *Kikuchi* discloses a compound according to general formula (1). See, Office Action, page 3, lines 9-11. However, the portion of *Kikuchi* relied on by the Patent Office merely discloses a compound with a single benzene ring as the Ar<sup>2</sup> element located between the two nitrogen elements. See, *Kikuchi*, page 7, compound 18. In contrast, a ring assembly requires two or more single rings or fused systems that are directly joined to each other by double or single bonds. See, IUPAC Gold Book, "ring assembly," <http://goldbook.iupac.org/R05393.html>. As such, *Kikuchi* fails to disclose a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings as required, in part, by the present claims.

Accordingly, Applicants respectfully request that the rejection of Claim 17 under 35 U.S.C. §102(b) to *Kikuchi* be withdrawn.

In the Office Action, Claims 17-20 are rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Publication No. 2002-069044 A to Hosokawa et al. ("Hosokawa"). In response, Claim 17 has been canceled and Claim 18 has been amended. In view of the amendment and/or for at least the reasons set forth below, Applicants respectfully submit that *Hosokawa* fails to disclose or suggest each and every element of independent Claim 18 and Claims 19-20 that depend therefrom.

For example, *Hosokawa* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent

group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings and wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2) as required, in part, by independent Claim 18. The Patent Office asserts that *Hosokawa* discloses compounds within the definition of general formula (1). See, Office Action, page 3, lines 12-15; page 4, lines 1-3. In response, Applicants have amended independent Claim 18 to remove the reference to general formula (1) and instead require a material represented by general formula (2). Compound A24 cited by the Patent Office merely discloses a single fused-ring hydrocarbon as the Ar<sup>2</sup> element located between the two nitrogen elements. See, *Hosokawa*, page 8, compound A24. As discussed previously, one of ordinary skill in the art would understand that a ring assembly requires two or more single rings or fused systems that are directly joined to each other by single or double bonds. Therefore, compound A24 of *Hosokawa* does not fall within the definition of general formula (2) as required, in part, by the present claims.

Furthermore, compound A22 of *Hosokawa* is specifically excluded from general formula (2). Compound A22 includes unsubstituted phenyl groups attached to the nitrogen at the location of Ar<sup>1</sup> in general formula (2), as well as an unsubstituted biphenyl group between the nitrogen atoms at the location of Ar<sup>2</sup> in general formula (2). See, *Hosokawa*, page 14, compound A22. Furthermore, in compound A22, each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3. See, *Hosokawa*, page 14, compound A22. As such, compound A22 does not fall within the definition of general formula (2). In fact, compound A22 has a much shorter lifetime than compounds of general formula (2). See, Specification, Table 1. Therefore, the two compounds cited by the Patent Office fail to meet the limitations of general formula (2) and *Hosokawa* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2) as required, in part, by independent Claim 18.

Accordingly, Applicants respectfully request that the rejection of Claims 17-20 under 35 U.S.C. §102(b) to *Hosokawa* be withdrawn.

In the Office Action, Claims 23-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Hosokawa*. In response, Claims 23, 25, 27 and 29 have been amended. In view of the amendments and/or for at least the reasons set forth below, Applicants respectfully submit that *Hosokawa* fails to disclose or suggest each and every element of independent Claims 23, 25, 27 and 29 and Claims 24, 26, 28 and 30-31 that depend therefrom.

As discussed previously, *Hosokawa* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings and wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2). The Patent Office admits that *Hosokawa* fails to exemplify the method for making compounds A22 and A24 but nevertheless asserts that because the compounds are within general formula (3) and *Hosokawa* discloses forming its compounds using halogenated reactants and reactants with a nitride group along with metal catalysts, one of skill in the art would expect the methods taught by *Hosokawa* to be applicable in forming the claimed compounds of general formula (3). See, Office Action, page 4, lines 16-18; page 5, lines 1-7. However, for reasons discussed previously, compounds A22 and A24 do not fall within general formula (3) and *Hosokawa* fails to disclose a compound of general formula (3) wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (3) as required, in part, by currently amended Claims 23, 25, 27 and 29. As such, one of ordinary skill in the art would have no reason to expect the reactions disclosed *Hosokawa* to form the claimed compound of general formula (3).

Additionally, *Hosokawa* never discloses the reaction path for compounds A22 and A24 cited by the Patent Office. The reaction paths for other compounds disclosed in *Hosokawa* merely includes the use of a palladium-based catalyst. See, *Hosokawa*, pages 11-14, formulas 8-

16. Nowhere does *Hosokawa* disclose or suggest the amount of metal or metal catalyst used or the specific compound which reacts with the metal or metal catalyst to form the compound of general formula (3), nor does the Patent Office cite support for such claimed elements. Thus, *Hosokawa* fails to disclose or suggest a method for producing an organic material represented by the general formula (3), characterized by reacting a compound represented by the general formulas (4)-1 to (7) below using an equivalent amount of a metal, a metal salt, or a metal catalyst, wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (3) in accordance with the present claims.

Accordingly, Applicants respectfully request that the rejection of Claims 23-30 under 35 U.S.C. §103(a) to *Hosokawa* be withdrawn.

In the Office Action, Claims 17-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Application No. 2003/0118866 A1 to Oh et al. ("Oh"). In response, Claim 17 has been canceled and Claims 18, 23, 25, 27 and 29 have been amended. In view of the amendments and/or for at least the reasons set forth below, Applicants respectfully submit that *Oh* fails to disclose or suggest each and every element of independent Claims 18, 23, 25, 27 and 29 and Claims 19-22, 24, 26, 28 and 30-31 that depend therefrom.

For example, *Oh* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings and wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2) as required, in part, by independent Claim 18. The Patent Office admits that *Oh* fails to disclose that its aromatic groups L1-L4 include fluoranthene groups but nevertheless asserts that it would have been obvious to one of skill in the art to select fluoranthene groups for two of the L1-L4 "because one would expect the compound to result in a well-functioning material for a device." See, Office Action, page 5, lines 16-19; page 6, lines 1-3.

However, *Oh* is entirely directed to improving the luminescent efficiency of a red luminescent layer of an organic electroluminescent device. See, *Oh*, Abstract; page 1, paragraph 3, lines 1-4. Moreover, the compound relied on by the Patent Office is used a host material, not an organic luminescent material. See, *Oh*, Abstract, lines 5-7; page 2, paragraph 29, lines 1-3. As such, Applicants respectfully submit that one of skill in the art would not have a reason to select fluoranthene groups as two of the L1-L4 groups to arrive at a green organic light-emitting material as embodied by the present claims and further illustrated in the Specification, since one of skill in the art would not expect the host material of *Oh* for use with a red electroluminescent layer to function well as a green organic light-emitting material. Therefore, *Oh* fails to disclose or suggest an organic light-emitting material comprising a material represented by a following general formula (2) wherein Ar<sup>2</sup> is a divalent group which is derived from a ring assembly having 30 carbon atoms or less and being comprised of monocyclic or fused-ring aromatic hydrocarbon having 1 to 3 rings and wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (2) as required, in part, by independent Claim 18 and Claims 19-20 that depend therefrom. Furthermore, for similar reasons, *Oh* fails to disclose or suggest a method for producing an organic material represented by the general formula (3), characterized by reacting a compound represented by the general formulas (4)-1 to (7) below using an equivalent amount of a metal, a metal salt, or a metal catalyst, wherein a compound in which said monovalent group is an unsubstituted phenyl group, said divalent group is a divalent group derived from unsubstituted biphenyl, and each of two fluoranthenes is bonded to nitrogen at the carbon numbered 3 is excluded from general formula (3) as required, in part, by Claims 23-30.

Accordingly, Applicants respectfully request that the rejection of Claims 17-30 under 35 U.S.C. §103(a) to *Oh* be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

Respectfully submitted,

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